

We claim:

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1. A composition for the repair or augmentation of tissue in an animal or human, comprising  
a biocompatible, bioabsorbable fluid which comprises a polyhydroxyalkanoate.
  2. The composition of claim 1 wherein the polyhydroxyalkanoate is a liquid or wax at a temperature between about 20 and 25 °C.
  3. The composition of claim 1 wherein the polyhydroxyalkanoate is liquid at the body temperature of the animal.
  4. The composition of claim 1 wherein the polyhydroxyalkanoate is a liquid at about 37 °C.
  5. The composition of claim 1 wherein the biocompatible fluid is a microdispersion of particles of the polyhydroxyalkanoate dispersed in a physiologically compatible liquid carrier.
  6. The composition of claim 5 wherein the carrier is a second polyhydroxyalkanoate or an aqueous solution.

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  7. The composition of claim 1 wherein the particles have a diameter of less than about 500 µm.
  8. The composition of claim 7 wherein the diameter is less than about 50 µm.
  9. The composition of claim 8 wherein the diameter is less than about 5 µm.
  10. The composition of claim 1 wherein the polymer is derived from one or more monomers selected from the group consisting of 2-hydroxybutanoate, 3-hydroxyalkanoates, 3-hydroxyalkenoates, 4-hydroxyalkanoates, 4-hydroxyalkenoates, 5-hydroxyalkanoates, 5-hydroxyalkenoates, 6-hydroxyalkanoates, and 6-hydroxyalkenoates.

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  11. The composition of claim 1 wherein the polyhydroxyalkanoate has a molecular weight of less than 100,000.

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12. The composition of claim 11 wherein the molecular weight is less than 50,000.

13. The composition of claim 1 having a viscosity between about 1 and 100,000 cP.

14. The composition of claim 13 having a viscosity between about 1 and 10,000 cP.

15. The composition of claim 1 further comprising an agent selected from the group consisting of dyes, compounds with anti-microbial activity, anesthetics, adjuvants, anti-inflammatory compounds, surfactants, steroids, lipids, enzymes, antibodies, and hormones.

16. The composition of claim 1 further comprising a peptide or protein.

17. The composition of claim 1 wherein the polyhydroxyalkanoate is amorphous.

18. A method for repairing, contouring, or augmenting tissue in an animal comprising the steps of:

- (a) selecting tissue in need of repair, contouring, or augmentation, and
- (b) introducing into the tissue the composition of claim 1.

19. The method of claim 18 wherein the tissue is soft tissue.

20. The method of claim 19 for use in the treatment of urinary incontinence or vesicoureteral reflux.

21. The method of claim 19 wherein the soft tissue is facial tissue.

22. The method of claim 19 wherein the soft tissue is skin, sphincter muscle, or urinary bladder. A

23. The method of claim 18 wherein the tissue is selected from the group consisting of bone, cartilage, tendon, and muscle.

24. The method of claim 18 wherein the introduction is by injection.

25. A method for treating osteoarthritic knees in an animal comprising:

- (a) selecting the osteoarthritic knee in need of treatment, and

(b) introducing into the knee a composition comprising a biocompatible, bioabsorbable fluid which comprises a polyhydroxyalkanoate, wherein the composition is suitable for use as a viscosupplement.

26. The method of claim 25 wherein the polyhydroxyalkanoate is a liquid.

27. The method of claim 25 wherein the composition is introduced into the knee by injection into the knee joint.

28. The method of claim 25 wherein the composition replaces or supplements synovial fluid.

29. A composition for use in the treatment of osteoarthritic knees comprising a biocompatible, bioabsorbable fluid which comprises a polyhydroxyalkanoate,

wherein the composition is suitable for use as a viscosupplement

30. The composition of claim 28 wherein the polyhydroxyalkanoate is amorphous.

31. A kit of parts comprising

(a) the composition of claim 1; and

(b) a means for delivering the composition to a patient.

32. The kit of claim 31 wherein the means for delivering comprises a needle and a syringe.